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DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, AND AGRICULTURE.

New printing Press.

AT a meeting of the members of the Edinburgh Institute, held on Tuesday the 8th, current, Mr. John Ruthven, printer, Edinburgh, laid before them a working model of his newly invented printing press.

This press is constructed on principles entirely different from those of the presses now in use; to all of which, in the judgment of several professional men who examined it, it is decidedly superior.

As its mechanism, however, cannot be easily understood without actual inspection, it would be to little purpose to attempt to describe it, but it may be observed in general, that by substituting compound levers for the screw, Mr. Ruthven has effected a considerable saving of power, and by a more commodious arrangement of the different parts of the machine, he has been enabled to remove all the material defects of the printing press hitherto in use. In Mr. Ruthven's press, the coffin, or tablet for the types, remains fixed, and the impression on one side of a sheet is completed by *one* application of the moving power, and of course by one exertion of the arm. He has a contrivance for making register (printing the pages exactly on the back of each other) in an improved manner, and a regulator for producing the different degrees of pressure that may be required. Instead of pulling with the right hand, as in the other presses, a practice both inconvenient and dangerous, the workman produces the impression by turning with the left hand a winch or handle, which makes about one third of a revolution. It is proper to add, that all the parts are contrived and disposed with a due regard to economy of time and labour and with a nice attention to every circumstance which a practical knowledge of the art could suggest.

Mr. Ruthven's construction has the advantage of being equally applicable on a great or a small scale. With the model he exhibited, which did not occupy more space than a cubic foot, and although made of iron, was easily carried under the arm, he printed off, in the presence of the meeting, eight small pages, (contained in the size of a demy octavo) affording ocular evidence of the accuracy with which the impression was taken, and the facility with which the operation was performed. Such small presses would certainly be very useful in remote country places; they might even furnish a very pleasing amusement to the amateurs; and those of the large size, when their advantages become known, will no doubt be brought into general use by the trade. We understand that Mr. Ruthven, having obtained patents, is preparing a number for sale.

Mr. Ruthven concluded the account of his model, by observing, that as no circumstances connected with the progress of an art that had rendered such a signal service to mankind, was devoid of interest, he thought it but justice to state, that the Edinburgh Institute had the merit of bringing this invention into notice, as the attention excited by the portable press, formerly exhibited at a meeting of the Institute, had induced him to attempt one on a more extensive scale, which he had now the satisfaction to lay before the Society.

A Machine to Facilitate Printing.

A patent has been recently granted for a machine to facilitate the operations of printing. The objects of the machine, are, precision, speed, and the saving of skill, labour, and expense. It abrogates almost all the former apparatus of the press and the preparation of the types; performs by its own action the several parts of furnishing, distributing, and communicating the ink, and giving the pressure. At its ordinary rate, sixteen sheets a minute are discharged by it; and indeed its velocity is only limited by the power of placing and removing the sheet, which are all the manual assistances required. The machine has been exhibited to the syndics of the press at Cambridge, and was examined during three days last week by most of the principal members of the university; and on receiving the report of their deputation, Dean Milner, master of Queen's College; Mr. Wood, president of St. John's; and Mr. Kaye, tutor of Christ's, the syndicate agreed with

Messrs. Bacon and Donkin, of Norwich, the patentees, for its introduction at the office of the university.

On the Transplantation of Blossom Buds. By the President.

(From the Transactions of the Horticultural Society of London.)

It has been long known to naturalists, that the blossom buds of trees are generally formed in the season preceding that in which they unfold and execute their office; and the art of removing buds from one tree to another was probably almost as well understood two thousand years ago as at present. But, as far as my information extends, it does not appear that any attempts have ever been made to transfer a part of the abundant blossom buds from one tree to the barren branches of others; though the experiments, which I shall proceed to state, prove that this may be done with much facility, and probably in some cases with very considerable advantage.

I observed in the autumn of the year 1810, that the suckers which had sprung from the roots of the rose-trees in my garden were in a perfectly proper state to receive buds in the end of August; and that buds which appeared to contain blossoms might at the same period be taken with facility from the branches of trees of more valuable varieties of the same species. The largest and best buds I could procure were therefore inserted into scions from the roots of other plants; and these buds, being abundantly supplied with nutriment, afforded much finer roses than they would have done had they retained their natural situation.

In the last autumn I repeated many similar experiments upon the pear and peach tree, and with equal success. An old and unproductive pear-tree, which grew upon a North-west wall, was pruned very closely, so as to occasion the protrusion of many strong succulent shoots; and into these apparent blossom buds, of the tree St. Germain, and the winter Verte Longue pears were inserted at different periods. Many of these were inserted in the end of July and in the beginning of August; and these generally vegetated soon afterwards, and afforded leaves only; and the remainder, which did not then vegetate, still continued mere leaf buds. But most of those which were not inserted till the end of August or the beginning of September, have succeeded most perfectly, and are now beginning to unfold with greater vigour than the buds of the trees from which they were taken; and I do not entertain any doubt that they will afford, under favourable circumstances, very fine fruit.

I found those buds of the pear tree to succeed best which had formed upon the bases of abortive bunches of blossoms of the preceding year, and that, instead of taking out the wood of the bud wholly, as usual, it was most advantageous to let it remain in small quantities, and being pared very thin.

Some buds were inserted into seedling plants of four months old only, and others into yearling plants; and these succeeded so far as to live perfectly; but they were inserted in the end of July, and like the others removed at that period, these remain leaf buds. I am, however, much inclined to believe, that pears might be obtained even from yearling trees in pots, though such fruit would probably be without flavour or richness, and consequently not worth obtaining, unless as objects of curiosity. But buds inserted into the strong succulent young shoots of old trees, will probably afford abundant crops of very fine pears, and these might be obtained with little trouble; for a moderately skilful operator will easily insert at least three hundred buds in a day. If the gardener object to the labour as too great, he is ill qualified for his office; and if, having the disposition, he cannot spare the necessary time, he wants a better master.

I made similar experiments upon seedling peach trees of five months old, under glass; and I do not entertain any doubt that abundant crops of fruit might be obtained from such trees in the succeeding season. I do not, however, imagine that such fruit would possess much richness or flavour; and as trees of this species, unlike those of the pear, afford abundant crops whilst very young, the experiment, if successful, would scarcely prove worth repeating. It may, however, be often advantageous to transfer a part of the blossom buds of any valuable varieties of peach or nectarine to trees of less valuable kinds: and as this can be done after the fruit of any moderately early variety is ripe, and as the buds may be sent a great distance in